



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/242,822	02/24/1999	GEORGES FICHE	Q053403	1550

7590 06/15/2004

SUGHRUE MION ZINN MACPEAK & SEAS
2100 PENNSYLVANIA AVENUE NW
SUITE 800
WASHINGTON, DC 200373213

EXAMINER

PHILPOTT, JUSTIN M

ART UNIT	PAPER NUMBER
----------	--------------

2665

DATE MAILED: 06/15/2004

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/242,822

Applicant(s)

FICHE, GEORGES

Examiner

Justin M Philpott

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed April 28, 2004 have been fully considered but they are not persuasive.

First, applicant argues (pages 10-12) that one of ordinary skill in the art would not understand Watanabe such that the skilled artisan would modify the network of Wong with the teachings of Watanabe. Specifically, applicant argues that there exists an infinite possible number of variations for modifying a switching network and a skilled artisan would require explicit instructions to apply the teachings of Watanabe to the network of Wong. However, as discussed in the previous office action, Watanabe discloses clear motivation and obvious modification means for combining the teachings of the switching network of Watanabe to other switching networks such as the switching network of Wong. Specifically, Watanabe teaches an improvement in ATM cell switching which provides routing with high probability of success (e.g., see col. 2, lines 26-38). Furthermore, Watanabe teaches a specific three-stage switching network (e.g., FIG. 1) having external connections (i.e., solid line connections to/from SRMs) which is approximately identical to the three-stage switching network of Wong (e.g., FIG. 2). Watanabe then teaches a cell copying and internal switching structure (e.g., designated by dotted lines) is placed within a switching fabric (e.g., 121 in FIG. 1) to provide the improvement in ATM cell switching yielding high probability of switching success (e.g., see col. 2, lines 26-38). Thus, one of ordinary skill in the art would be motivated to apply the teachings of Watanabe to the switching network of Wong in order to provide an improvement in ATM cell switching

Art Unit: 2665

yielding high probability of switching success (e.g., see col. 2, lines 26-38), and such a modification of Wong would be obvious to one of ordinary skill in the art in view of Watanabe by utilizing the cell copying teaching within switching fabric 121 of the three-stage switching network of Watanabe (FIG. 1) in the switching fabric $k \times k$ of Wong (FIG. 2). Thus, applicant's argument is not persuasive. Further, regarding applicant's argument that Wong does not teach the limitation of being "further configured so that the flow of data at each input of the inlet can be directed to each matrix of the outlet stage", such a teaching is clearly taught by Watanabe, in the combination of Wong in view of Watanabe, as discussed in the previous office action. Thus, applicant's argument still is not persuasive.

Second, applicant argues (pages 12-14) that Watanabe teaches away from having cell copying in the first stage by disclosing that cell copying is normally not included in the first stage. However, Watanabe considers a situation where a plurality of cells could be copied to the same leaf (col. 3, lines 17-23). Watanabe clearly considers situations where such an occurrence is not an issue by disclosing that primary SRMs only "normally" do not have the function of cell copying. That is, for situations where the above cell copying situation is not an issue, Watanabe clearly provides for the primary SRMs to have cell copying capability. Accordingly, while Watanabe may disclose a preferred embodiment wherein the primary SRMs do not include cell copying (e.g., FIG. 1), at the time of the invention it would have been obvious to one of ordinary skill in the art to utilize an alternate embodiment having cell copying in the primary SRMs as enabled by Watanabe (col. 3, lines 17-23) in order to provide a more robust system having further cell copying capability. Thus, applicant's argument is not persuasive. Further, applicant argues that Watanabe does not teach the "exclusivity" limitation of applicant's claims. That is, it

Art Unit: 2665

appears that applicant has incorrectly related the teachings of Watanabe to be that of broadcasting. However, on the contrary, Watanabe clearly teaches the cell copying is for multicast connections (e.g., see col. 2, lines 15-25), and not broadcast connections. It is inherent in the art of multicasting that cells are transmitted exclusively to the addresses specifically defined by the multicast address. Thus, Watanabe clearly teaches the “exclusivity” limitation of applicant’s claims by teaching cell copying is for multicast connections.

Third, applicant argues (page 14), that Examiner has not identified specific grounds for rejecting claim 4. However, specific grounds for the rejection of claim 4 have been provided on page 6 of the previous office action, and these grounds have been repeated in the following action.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of U.S. Patent No. 5,802,049 to Watanabe.

Regarding claim 1, Wong teaches devices for switching ATM cells (figures 1-4; primary reference is made to the general architecture of figure 1 which figures 2- 4 are based upon) establishing a single path per virtual circuit having N.R inputs (k.n inputs) and N.R outputs (l.p outputs), N and R (k or l, and n or p) being two integers not less than two, the device comprising at least two stages, including an inlet stage (n x m stage) comprising a plurality of matrices (1 to k) and having R.N sets (n.k sets) of Q outputs (r) and an outlet stage (s x p stage) comprising a

Art Unit: 2665

plurality of matrices (1 to l) and having $R.N$ sets ($p.l$ sets) of Q' inputs (r) – wherein $n=p$, $m=n$, and $m=s$ (see page 709, col. 1, lines 4 and 17) and wherein figures 1 and 2 indicate $k=1$, thus, $n=m=s=p=R$ and $k=l=N$. Furthermore, the above is characterized in that for the flow of data carried by any intermediate link (one of the links in a grouping of r links, see page 708, column 2) that is part of the single path set up between an input and an output (r) to be a subset of the incoming flux at that input and also a subset of the outgoing flux at that output, each input (n) of the inlet stage ($n \times m$ stage) can be connected to an output of the inlet stage (at m , one of the lines of a corresponding grouping of r lines) which can be selected only from Q outputs (r lines) associated with that input (e.g., r lines are provided “for each path between the two stages”); and in that each output (p) of the outlet stage ($s \times p$ stage) can be connected to an input of the outlet stage (at s , one of the lines of a corresponding grouping of r lines) which can be selected only from Q' inputs (r lines) of the output stage associated with that output (p). However, Wong may not specifically disclose an exclusive association between each inlet stage input/outlet stage output and each set of Q outputs/ Q' inputs (r lines) such that the flow of data at each input of the inlet stage can be directed to each matrix of the outlet stage.

Watanabe teaches an improvement in ATM cell switching and, specifically, teaches an exclusive association between each of an inlet stage (e.g., secondary SRM 121-123 in FIG. 1) input and outlet stage (e.g., cubic SRM 131-133) output such that the flow of data at each input of the inlet stage can be directed to each matrix of the outlet stage. Further, while Watanabe may disclose a preferred embodiment (e.g., FIG. 1) wherein a primary SRM stage (e.g., primary SRM 111-113) may not also have the above-mentioned association (i.e., may not have cell copying functionality), Watanabe additionally contemplates an embodiment with such association by

Art Unit: 2665

disclosing that the primary SRMs only “*normally* do not have the function of copying a cell” in order to “prevent the plurality of cells from the single cell in a single root from being output finally to the same leaf” [emphasis added] (e.g., see col. 3, lines 17-23). The teachings of Watanabe provide routing with high probability of success, reducing the lost-call rate when new subscribers are added for a point-to-multipoint connection (e.g., see col. 2, lines 26-38). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Watanabe to the system of Wong in order to provide reduce the lost-call rate when new subscribers are added for a point-to-multipoint connection.

Regarding claims 2, 3 and 5, Watanabe teaches having $R \cdot N$ outputs (e.g., 3.3 outputs) organized into R sets (e.g., 3 sets) of N outputs (3 outputs) with each set corresponding to a respective one of the R inputs (3 inputs). As discussed above, the teachings of Watanabe provide routing with high probability of success, reducing the lost-call rate when new subscribers are added for a point-to-multipoint connection (e.g., see col. 2, lines 26-38). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Watanabe to the system of Wong in order to provide reduce the lost-call rate when new subscribers are added for a point-to-multipoint connection.

Further, regarding claim 3, Wong teaches (figure 2) an inlet stage ($n \times m$ stage), a central stage ($k \times k$ stage), and an outlet stage ($m \times n$ stage) characterized in that, Q being equal to $R(n)$, the inlet stage comprises $N(k)$ matrices each having $R(n)$ inputs each of which can be connected to an output of that matrix which can be selected only from $R(m)$, or n wherein $m=n$; see page 709, col. 1, line 17) outputs of the set of outputs corresponding to that input, and the central stage ($k \times k$) comprises a set of $R(m)$ matrices each having $N(k)$ inputs and $N(k)$ outputs wherein the

Art Unit: 2665

R (m) outputs of each set of outputs of the inlet stage are connected to inputs belonging to the same set of R (k) matrices of the central stage. Furthermore, the above is characterized in that, Q' being equal to R (n), the outlet stage comprises N (k) matrices each of which have R (m) inputs and R (n) outputs, wherein each output of a matrix can be connected to an input of that matrix which can be selected only from R (m) inputs corresponding to that output. Further, as discussed above regarding claim 2, Watanabe teaches having R.N outputs (e.g., 3.3 outputs) organized into R sets (e.g., 3 sets) of N outputs (3 outputs) with each set corresponding to a respective one of the R inputs (3 inputs). As discussed above, the teachings of Watanabe provide routing with high probability of success, reducing the lost-call rate when new subscribers are added for a point-to-multipoint connection (e.g., see col. 2, lines 26-38). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Watanabe to the system of Wong in order to provide reduce the lost-call rate when new subscribers are added for a point-to-multipoint connection.

Further, regarding claim 5, the device of Wong in view of Watanabe teaches a switching device according to claim 3 as discussed above. Furthermore, while Wong in view of Watanabe may not specifically disclose N and R values such that $N=2.R^2$, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on Appellant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195

Art Unit: 2665

USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of the system of Wong in view of Watanabe since it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value.

Regarding claim 4, Wong teaches (figure 3) an inlet stage ($n \times m$ stage), a central stage ($l \times l'$ stage), and an outlet stage ($m' \times n'$ stage) characterized in that Q and Q' (r and r') are equal to R (e.g., see page 709, col. 2, line 17 and page 710, col. 1, line 10 wherein $l=l'$ and $m=m'$ and therefore $r=r'=(Q=Q')=m=R$), the central stage ($l \times l'$ stage) includes R^2 matrices ($r=r'$, therefore the $l \times l'$ stage includes r^2 or R^2 matrices), and the matrices of the inlet stage and the matrices of the central stage are organized into R sets (n sets) each including N matrices (h matrices) of the inlet stage and R matrices (g matrices, where g may be equal to m) of the central stage and the matrices of the outlet stage are organized into N sets (h' sets) of R matrices (m' matrices, where m' may equal r'). Furthermore, the above is characterized in that each of the $R.N$ matrices of the inlet stage ($n \times m$ stage) has a single input (i.e., the first/top input at n) and R outputs (r lines), each of the R^2 matrices of the central stage has N inputs and N outputs (l inputs and l' outputs) – the inputs being respectively connected to an output of each of the matrices of the inlet stage that belong to the same set of matrices, and each of the $R.N$ matrices of the outlet stage ($m' \times n'$ stage) has R inputs (r' lines) and a single output (i.e., the first/top output at n'), those R inputs (r' inputs) being connected to outputs respectively belonging to the R sets of matrices of the central stage and of the inlet stage.

Regarding claims 6 and 7, Watanabe teaches each output for each matrix of the inlet stage is exclusively associated with an input of one of the outlet stage matrices and each matrix of the outlet stage is connected to receive data from each input of the inlet stage, and wherein data received at each inlet for the outlet stage matrix can be transmitted to any output of the output stage matrix (e.g., see FIG. 1 and col. 3, lines 1-54 regarding point-to-multipoint connections).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

Art Unit: 2665

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin M Philpott



HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600